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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, PHILLIP

ART UNIT

PAPER NUMBER

2828

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/531,755	<b>Applicant(s)</b> KYOUGOKU ET AL.	
	<b>Examiner</b> PHILLIP NGUYEN	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9,10,15,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 2,7,8,11-14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/06, 4/18/05</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim 1 recites in lines 12-15 “a second current generating unit generating a second current that is needed for light emission of the laser responsive to an input signal, and outputting the second current to the laser” and also in lines 20-23 “an auxiliary current control unit causing the second current generating unit to generate a predetermined auxiliary current and output the auxiliary current to the laser” which are confusing. It is not clear if the “second current” and the “predetermined auxiliary current” are different since both of the currents are generated by the same second current generating unit.

### ***Claim Rejections - 35 USC § 102***

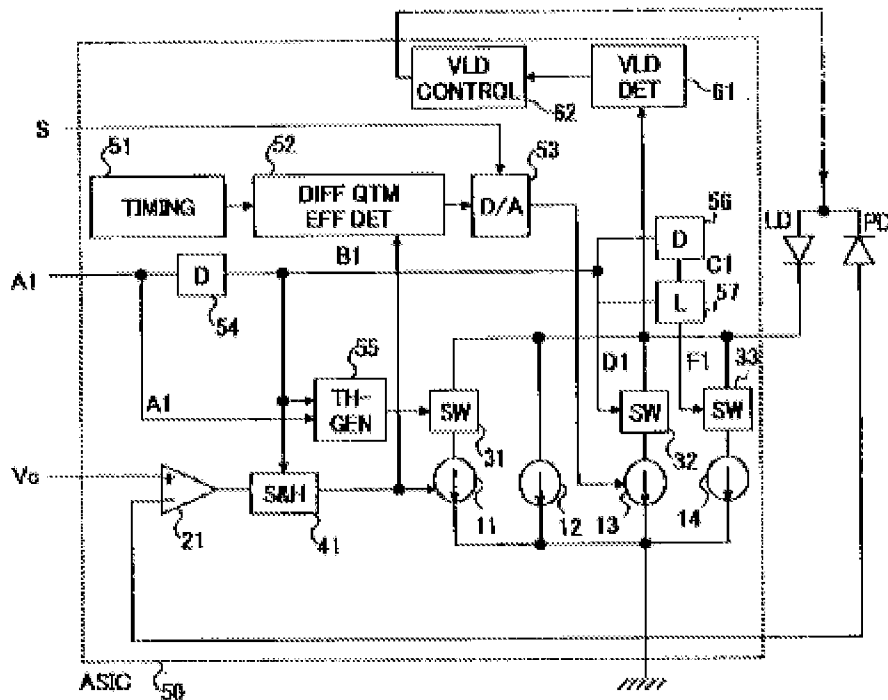
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5-6, 10-11, 15, and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishida et al. (US 6917639).

FIG. 24



With respect to claims 1, 15, and 19, Ishida discloses the claimed invention throughout the patent. Especially, in Fig. 24, Ishida discloses a semiconductor laser driving device 50 which performs a driving control of a semiconductor laser LD to control current supplied to the laser so that a desired amount of emission light is obtained, said semiconductor laser driving device comprising:

a first current generating unit generating a first current  $I_1$  that is below an oscillation threshold current of the laser, and outputting the first current to the laser invariably;

a second current generating unit 13 generating a second current that is needed for light emission of the laser responsive to an input signal, and outputting the second current to the laser;

a third current generating unit 14 generating a third current that controls the laser such that a detected amount of emission light from the laser accords with a given value, and outputting the third current to the laser;

an auxiliary current control unit 33 causing the second current generating unit to generate a predetermined auxiliary current and output the auxiliary current to the laser; and

an initialization unit 21, 41, 53 performing an initialization operation to detect luminescence characteristics of the laser, and outputting a signal, indicating a value of the second current derived from the detected luminescence characteristics, to the second current generating unit 13,

wherein the third current generating unit controls the third current so that an amount of light outputted by the laser which receives a sum of the first current, the second current, the third current and the auxiliary current, accords with a predetermined amount. It is inherent that the laser receives the sum of first current, second, third, and auxiliary current according to the Fig. 24.

With respect to claim 3, Ishida discloses the second current generating unit 13 comprising a current-output type DAC 53 which generates a predetermined reference current and outputs a current based on the reference current according to a received digital signal, and the auxiliary current control unit causes the second current generating unit to add the auxiliary current to the reference current of the DCA.

With respect to claims 5 and 10, Ishida discloses the first current generating unit, the second current generating unit, the third current generating unit, the auxiliary current generating unit, and the initialization unit are integrated on a single integrated circuit which is called ASIC.

With respect to claims 6 and 19-20, Ishida discloses the claimed invention throughout the patent. Especially, in Fig. 24, Ishida discloses a semiconductor laser driving device/an image forming apparatus 50 which performs a driving control of a semiconductor laser LD to control current supplied to the laser so that a desired amount of emission light is obtained, said semiconductor laser driving device comprising:

- a first current generating unit generating a first current 11 that is below an oscillation threshold current of the laser, and outputting the first current to the laser invariably;

- a second current generating unit 13 generating a second current that is needed for light emission of the laser responsive to an input signal, and outputting the second current to the laser;

- a third current generating unit 14 generating a third current that controls the laser such that a detected amount of emission light from the laser accords with a given value, and outputting the third current to the laser;

- an auxiliary current generating unit 14 causing the second current generating unit to generate a predetermined auxiliary current to the laser in response to a control signal (Df); and

- an initialization unit 21, 41, 53 performing an initialization operation to detect luminescence characteristics of the laser, and outputting a signal, indicating a value of the second current derived from the detected luminescence characteristics, to the second current generating unit 13,

wherein the third current generating unit controls the third current so that an amount of light outputted by the laser which receives a sum of the first current, the second current, the third current and the auxiliary current, accords with a predetermined amount. It is inherent that the

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laser receives the sum of first current, second, third, and auxiliary current according to the Fig.

24.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 6917639). Ishida discloses the claimed invention except for the auxiliary current generating unit comprising a current-output type DCA which generates a predetermined reference current and outputs a current based on the reference current according to a received digital signal. Ishida only discloses a DAC 53 for the second current generating unit. It would have been obvious to one skill in the art at the time the invention was made to provide a current type DAC for the auxiliary current generating unit in order to discretely control the current generating unit.

***Allowable Subject Matter***

4. Claims 2, 7-8, 11-14, 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phillip Nguyen/

AU 2828

/Minsun Harvey/  
Supervisory Patent Examiner, Art Unit 2828